NOAA Satellite and Information Service

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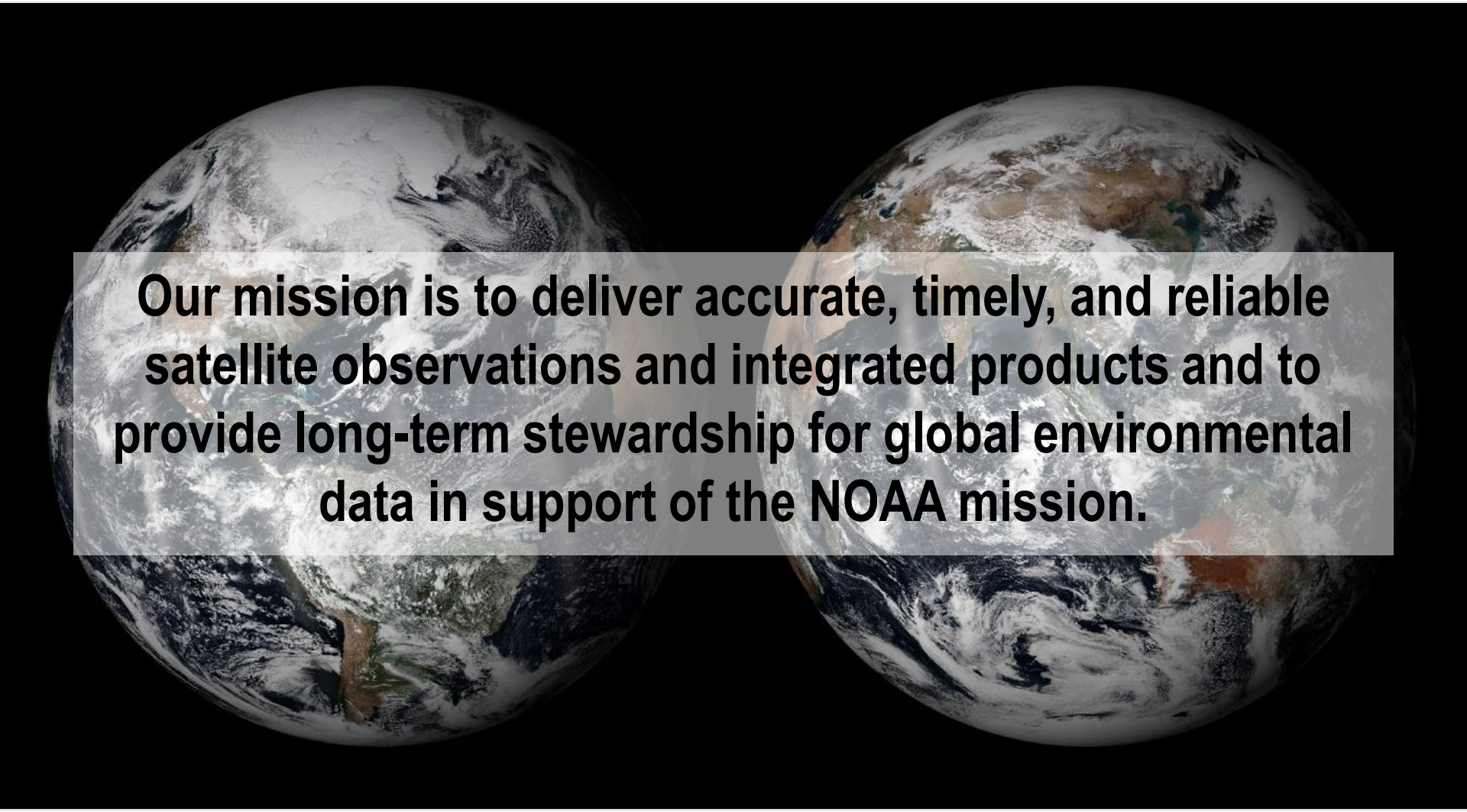
Aerospace Industries Association

Space Council Meeting

February 27, 2015

NESDIS Mission



Our mission is to deliver accurate, timely, and reliable satellite observations and integrated products and to provide long-term stewardship for global environmental data in support of the NOAA mission.

Supporting NOAA's Mission

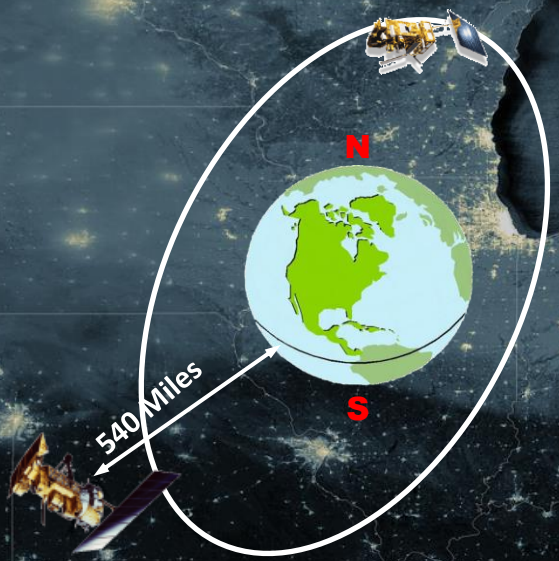
NOAA is a science-based services agency engaged with the entire Earth system science enterprise.

NOAA's Top Four Priorities:

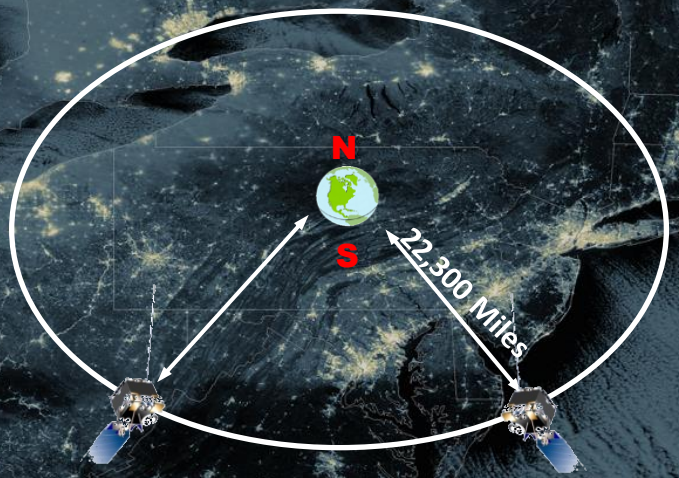
1. To provide information and services to make communities more resilient
2. To evolve the National Weather Service
3. To invest in observational infrastructure
4. To achieve organizational excellence

Two Orbits, One Mission

Polar-orbiting Operational Environmental Satellites (POES) Followed by S-NPP and JPSS-1 thru -4



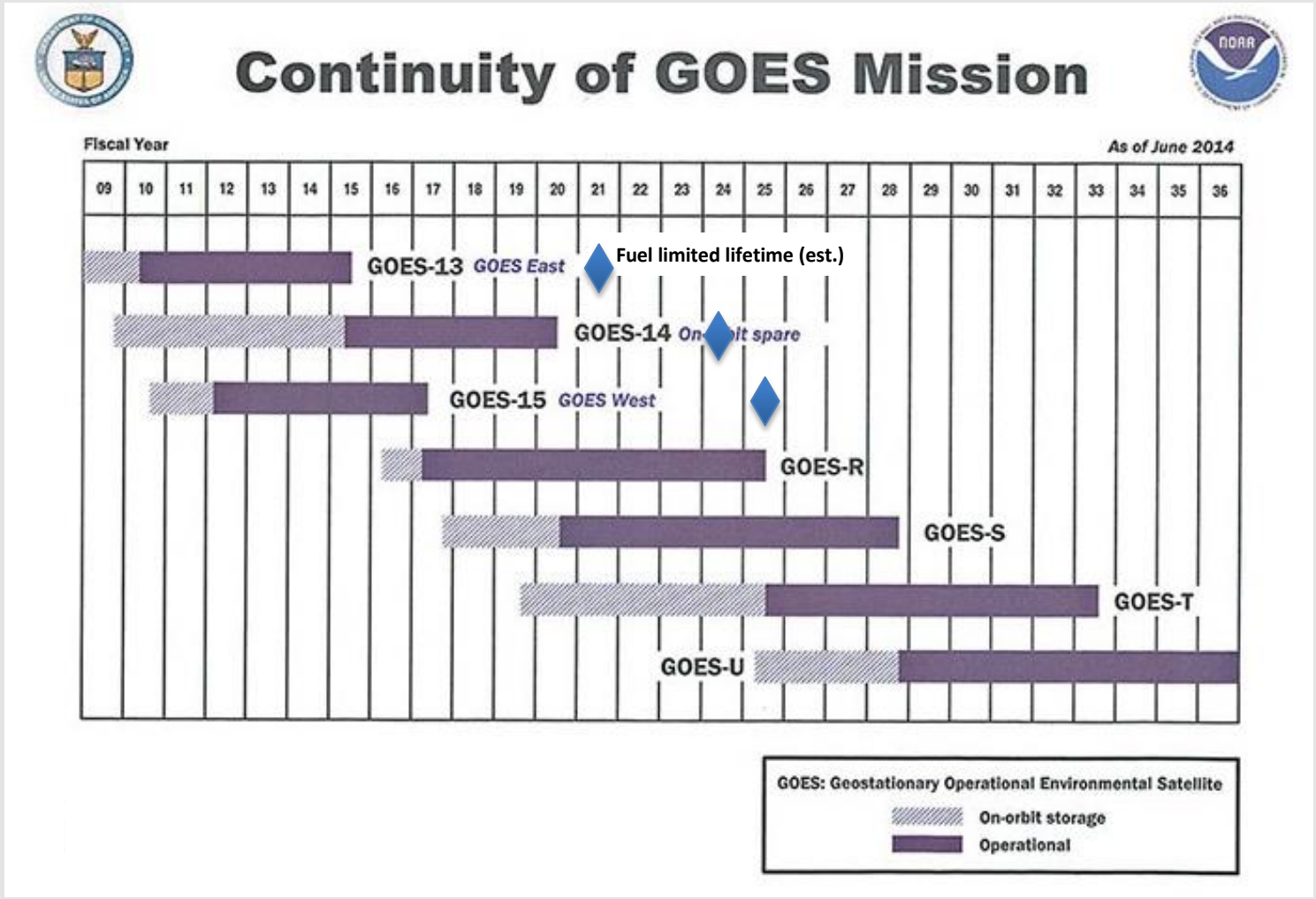
Geostationary Operational Environmental Satellites (GOES), Through GOES-U



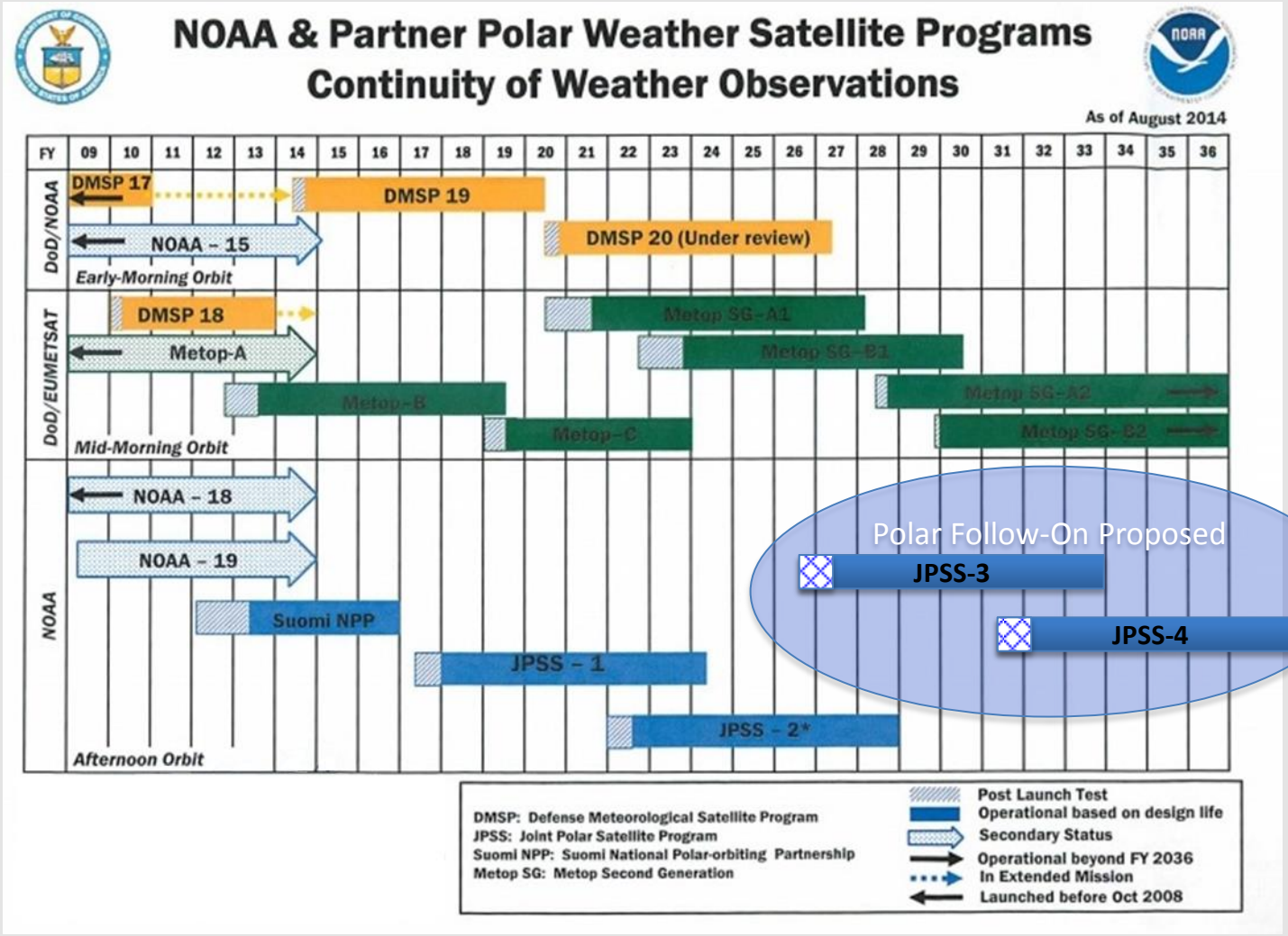
NOAA/NASA

S-NPP image of North America

GOES Flyout Chart



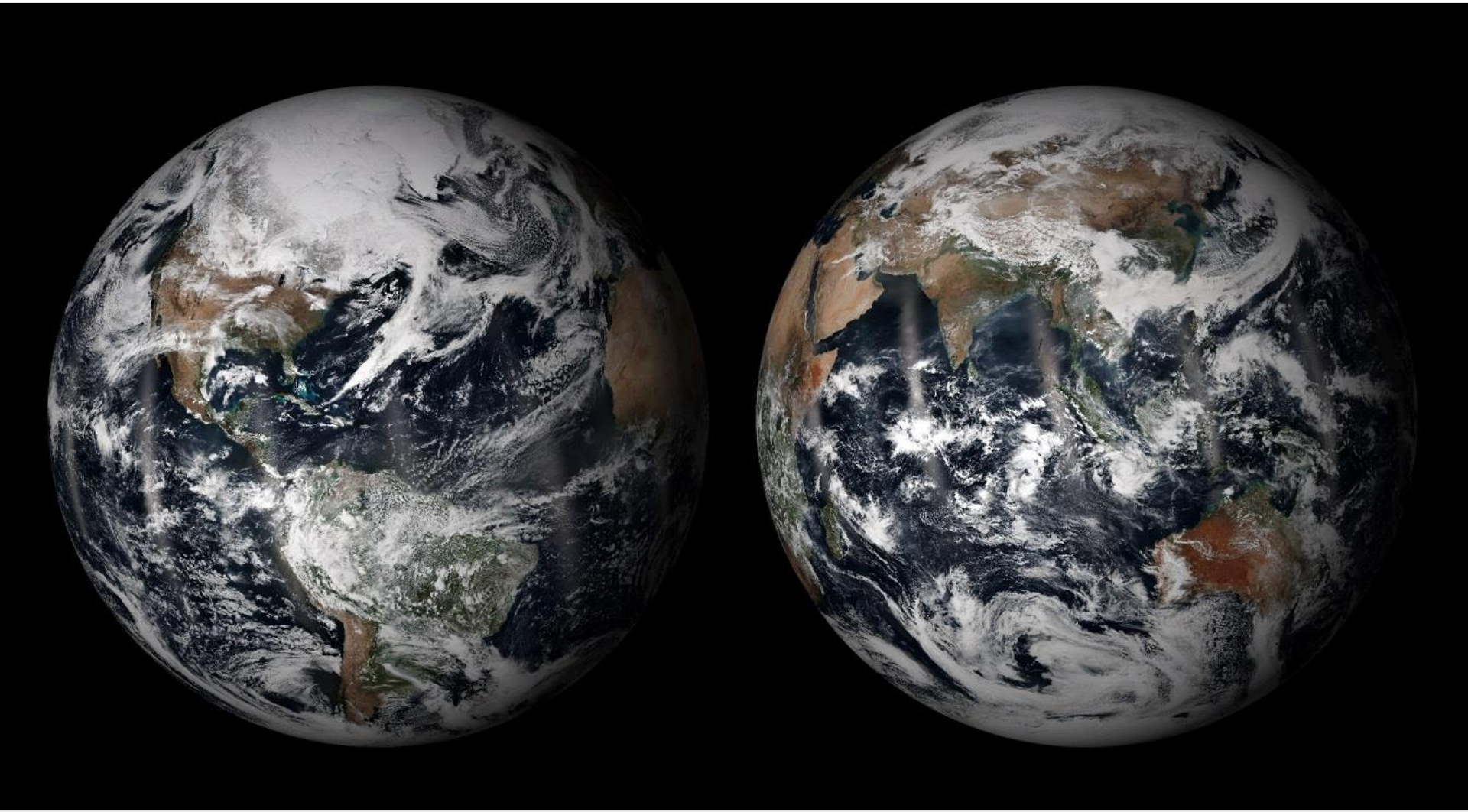
Polar Flyout Chart



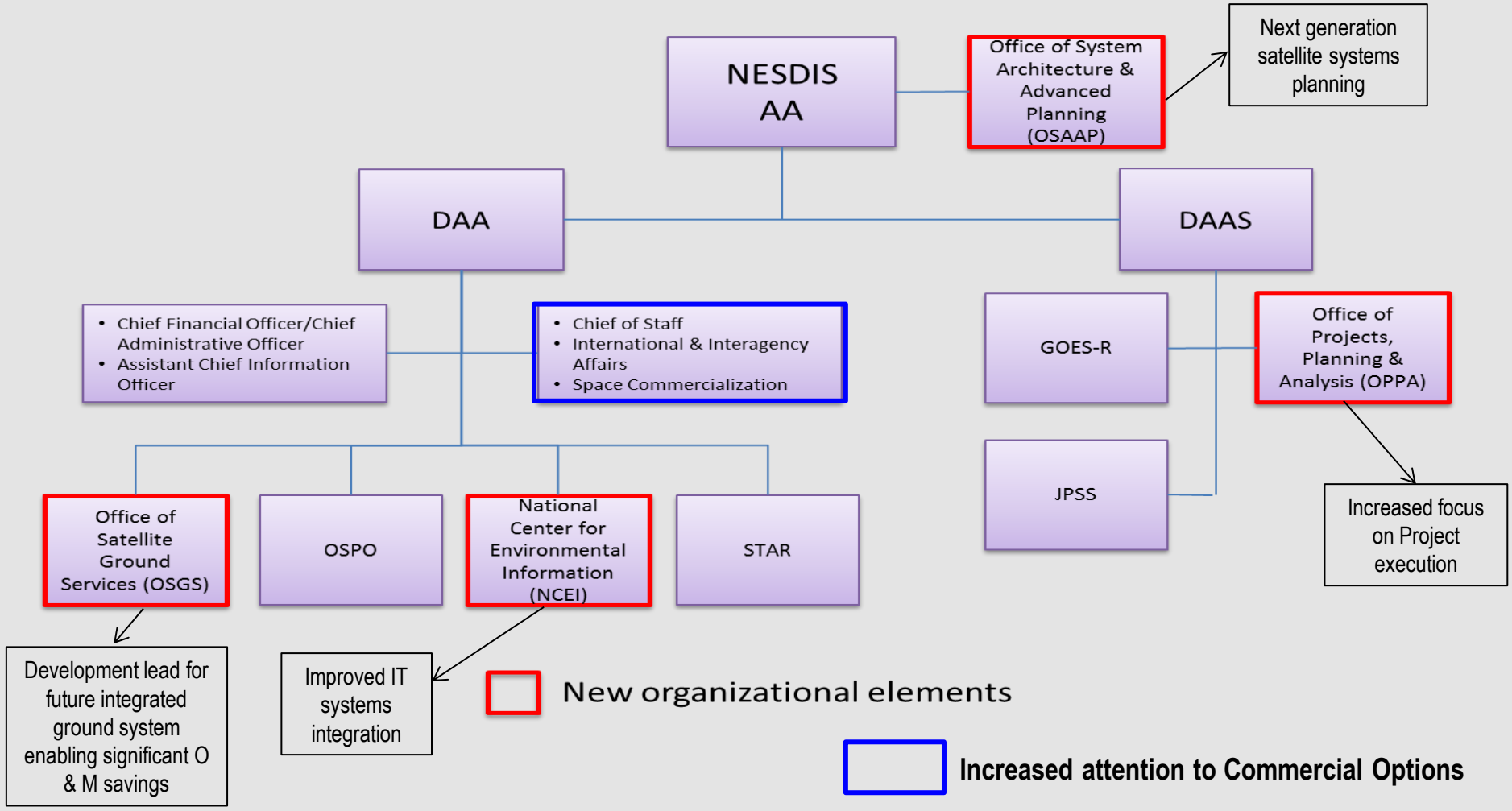
NOAA's Established LEO and GEO Platforms

- From Low Earth Orbit
  - The five (5) satellite combination of JPSS + Polar Follow-On (PFO) will establish NOAA's LEO coverage in the afternoon orbit well into the 2030s
  - Cooperative agreements with EUMETSAT and DMSP (near term) establishes the global polar constellation
- From Geostationary Orbit
  - The GOES-R through –U series, following on the GOES-N/O/P series, provides the US continental coverage well into the 2030s
  - Cooperative agreements with EUMETSAT and JMA establishes the global geostationary constellation
- Together, these platforms have and will form the backbone of our observing network for the coming decades
  - To which we will add measurements from other sources to improve our NWP performance

What is ahead?

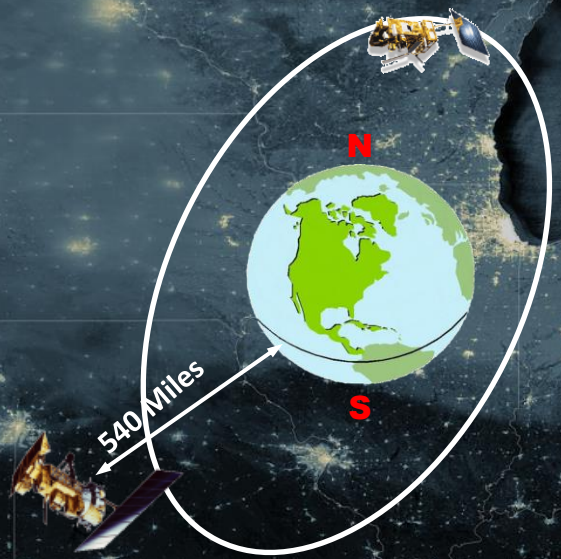


NESDIS Reorganization Supports A New Way of Doing Business



Future: One Mission, But Beyond Two Orbits

Polar-orbiting Operational Environmental Satellites (POES) Followed by S-NPP and JPSS-1 thru -4



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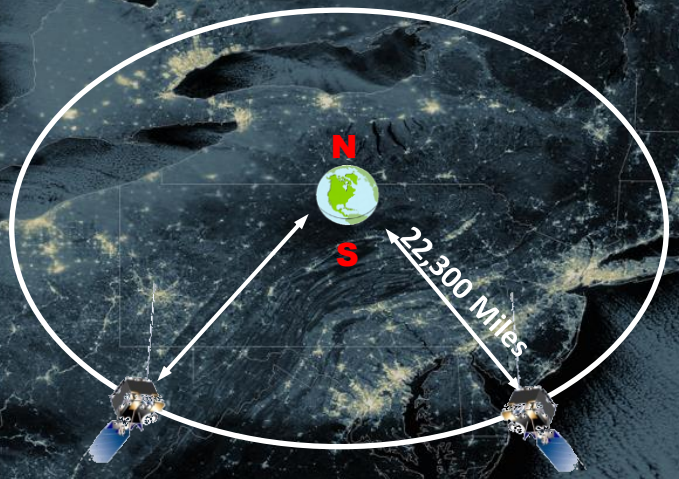
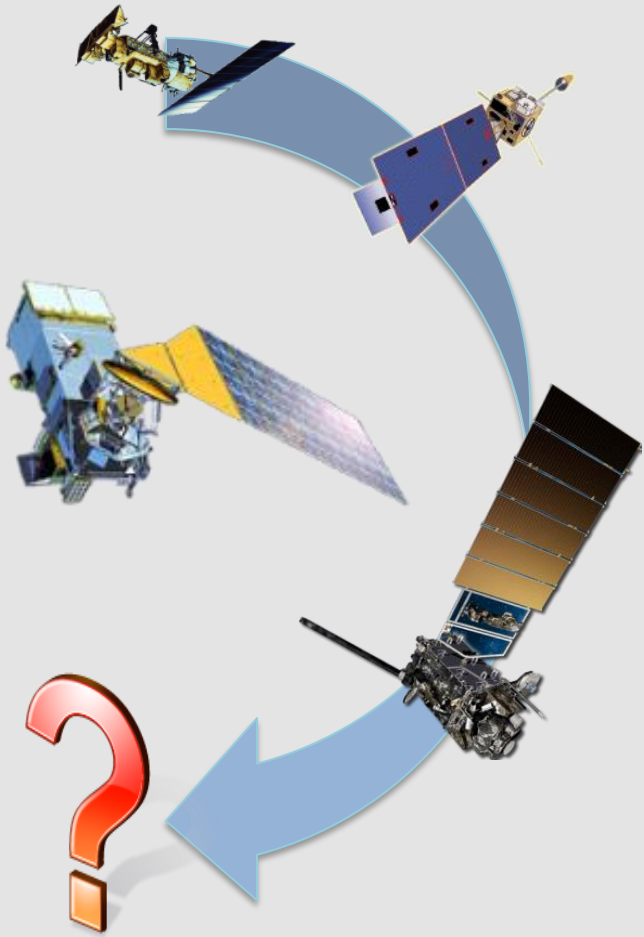


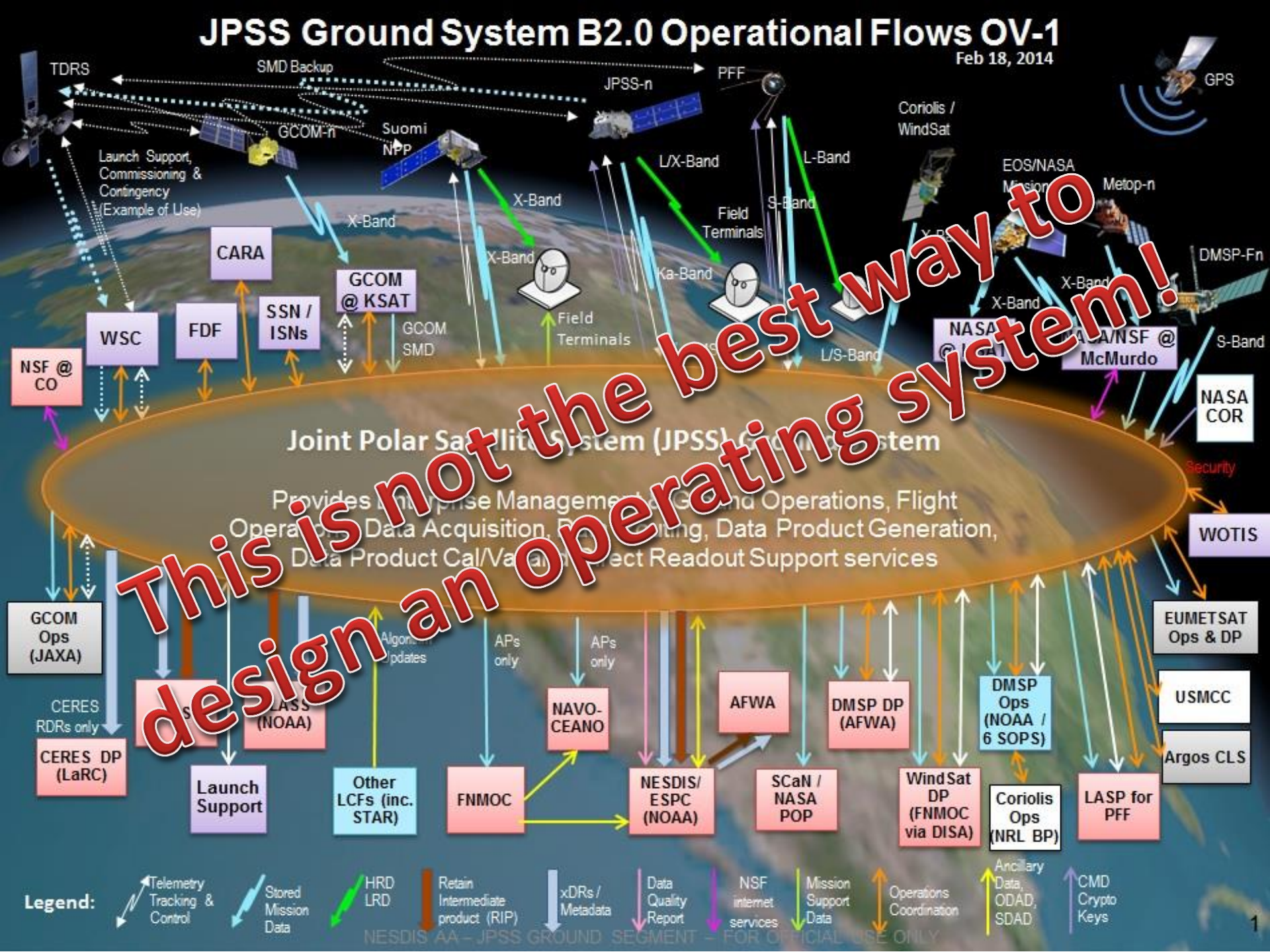
What will the future look like for NOAA Satellites?

NOAA/NASA

Beyond Two Orbits

- NOAA is rethinking “polar satellite” LEO perspective…
  - Cosmic-2 RO mission, 1st six satellites launching in 2016, 2nd six targeted for FY2019
  - Earth Observing Nanosatellite - Microwave (EON-MW) as an alternative microwave sounding approach
- Will be reviewing how we collect GEO in the future, to be more than GOES platforms
  - Will be engaged in analyzing alterative architectures, including hosted payload opportunities
- Increasingly, commercial possibilities may emerge to supply some of NOAA’s data needs




JPSS Ground System B2.0 Operational Flows OV-1
Feb 18, 2014
TDRS
SMD Backup
JPSS-n
PFF
GPS
GCOM-n
Suomi NPP
Launch Support, Commissioning & Contingency (Example of Use)
Coriolis / WindSat
EOS/NASA Mission
Metop-n
DMSP-Fn
L/X-Band
L-Band
S-Band
X-Band
Field Terminals
Ka-Band
L/S-Band
CARA
GCOM @ KSAT
GCOM SMD
WSC
FDF
SSN / ISNs
NSF @ CO
NASA @ GSFC
NASA/NSF @ McMurdo
NASA COR
Security
WOTIS
Joint Polar Satellite System (JPSS) Ground System
Provides Enterprise Management, Ground Operations, Flight Operations, Data Acquisition, Routing, Data Product Generation, Data Product Cal/Val, Direct Readout Support services
This is not the best way to design an operating system!
GCOM Ops (JAXA)
CERES RDRs only
CERES DP (LaRC)
Launch Support
Other LCFs (inc. STAR)
Algorithm Updates
APs only
APs only
FNMOC
NAVO-CEANO
NESDIS/ ESPC (NOAA)
AFWA
SCaN / NASA POP
DMSP DP (AFWA)
WindSat DP (FNMOC via DISA)
DMSP Ops (NOAA / 6 SOPS)
Coriolis Ops (NRL BP)
LASP for PFF
EUMETSAT Ops & DP
USMCC
Argos CLS
Legend:
Telemetry Tracking & Control
Stored Mission Data
HRD LRD
Retain Intermediate product (RIP)
xDRs / Metadata
Data Quality Report
NSF internet services
Mission Support Data
Operations Coordination
Ancillary Data, ODAD, SDAD
CMD Crypto Keys
NESDIS AA – JPSS GROUND SEGMENT – FOR OFFICIAL USE ONLY
1

Enterprise Ground System

Ground Enterprise Architecture Services (GEARS)

Observatory Management	Defined interfaces to ground systems
Product Management	Generate products
	Publish products
	Collect product information
	Collect processing information
Enterprise Management	Workflow management
	Repository management
	Access service
	Repository management services
Infrastructure	Infrastructure as a Service
Developer and Maintenance Tools Suite	

Ground Enterprise Value Added

- Greater efficiency and lower costs through common services and logistics
- Improved utilization by sharing resources across all mission needs
- Faster, more economical algorithm and product development and deployment
- Increased interoperability and simpler incorporation of new assets
- More flexible technology insertion
- Requirements-based end-to-end systems engineering for better risk management

Commercial Policies

- NOAA Commercial Data Policy
  - Policy to guide the use of space-based commercial data and services to meet NOAA requirements
- NESDIS Commercial Space Policy
  - Defines NESDIS process for engaging with the commercial sector to leverage commercial solutions for space-based earth observation requirements
- Both are in review in the Administration, expected release 2015.

Commercial Engagement Through RFIs

- RFI on solar wind data released in January 2014
  - Although there is no current service, there continues to be interest and capability in the private sector for providing such data
- RFI for A-DCS/SARSAT hosting opportunity released in August 2014
  - Will be using Air Force HoPS contract to examine LEO hosting opportunities for key instruments
- RFI on GNSS-RO commercial capabilities released in September 2014
  - Goals were to understand the range of options available to purchase commercial radio occultation data and evaluate the current capabilities of potential suppliers
  - NOAA will continue to explore commercial RO solutions in conjunction with existing RO capabilities

NESDIS Strategic Themes

Three themes will guide this new way of doing business:

1. **Continue to establish a track record for making and meeting our commitments.**
2. **Advance the NOAA and NESDIS organization as an integrated endeavor**
3. **Bring the critical management and execution expertise to NESDIS accomplish #1 and #2**

FY2016 Budget Overview

- Maintains 24x7 satellite operations, product development, processing and distribution
- Supports upcoming Jason-3, GOES-R, JPSS-1, and JPSS-2 launches
- Supports the operations and maintenance of NOAA's long-term safe archival storage capacity and access to preserved climatological, oceanographic and geophysical data
- Includes funding for the Polar Follow On, Space Weather Follow On, and COSMIC-2 second set of sensors
- Accommodates continued operations and planning for additional A-DCS and SARSAT instruments
- Enables continued development of systems engineering and enterprise ground capabilities supporting OSGS, OSAAP, OPPA
- Provides support for Data Center Operations and Big Earth Data Initiative
- Provides for a clarification of NOAA and NASA Earth observation satellite responsibilities

What's Ahead in 2015

- Keep GOES-R and JPSS on track for launches in 2016 and 2017
- Integrate PFO into the polar program
- Turn DSCOVR over to operations
- Jason-3 (Ocean Surface Topography Mission) launch
- National Academies Decadal Survey kick-off
- Release NOAA Commercial Space Policies

- Define the NOAA-NASA relationship as proposed in the FY2016 President's budget

Questions?